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Discussion of "Housing and the Labor Market: Time to Move and Aggregate Unemployment" by Peter Rupert and Etienne Wasmer

Michael W. L. Elsby

University of Edinburgh and NBER

The motivation of this paper is to try to understand how geographical mobility interacts with the determination of unemployment. This is an important and relatively understudied question. It seems intuitive that part of the frictions that shape the equilibrium level of joblessness in modern economies must be those that limit the mobility of workers across space.

Peter Rupert and Etienne Wasmer have devised a novel approach to this question: They view the problem as one of search over commuting distance. A distinctive virtue of their approach is its simplicity and parsimony, an advantage not shared by alternative leading models of geographical mobility. And the result the authors converge on is an intuitive one: Mobility frictions reduce mobility and raise equilibrium unemployment.

In what follows, I focus on three main reactions to the paper. The first relates to the role of Rupert and Wasmer's assumption of *isotropy*—that space looks identical viewed from any location. Such an assumption can appear strong at first blush, as the authors note themselves. In addition, further reflection also would suggest that this assumption may play an important role in the model's main result—that mobility frictions raise unemployment.

To see how, it is useful to think through the logic of this result. As I understand it, higher mobility frictions in the model (parameterized by a reduction in the arrival rate of housing offers, λ_H) imply that workers will find it harder to move once they are employed. Knowing this, unemployed workers become choosier about their commute distance, and consequently unemployment rises.

Thus, unemployment rises in Rupert and Wasmer's model because mobility frictions reduce the value of employment to workers relative to the value of unemployment. *A priori*, it wasn't obvious to me that this result would hold: Shouldn't mobility frictions reduce the value of unemployment as well as the value of employment, since unemployed workers also forgo the ability to move? The answer is that the unemployed have no reason to move in Rupert and Wasmer's model, since space is isotropic!

The latter highlights the importance of isotropy in generating the link between mobility frictions and unemployment in the model. If the value of unemployment were to decline symmetrically with the value of employment as mobility frictions rise, it would seem that the latter frictions should be neutral with respect to equilibrium unemployment.

My second reaction is motivated by a comparison of Rupert and Wasmer's model with alternative models of geographical mobility. As the authors note, two strong assumptions in the model are that there is an exogenous wage, and that frictions to mobility are shaped by an exogenous housing offer arrival rate λ_H. These run counter to a key lesson from the literature on migration that mobility acts as a form of spatial arbitrage, i.e. migration responds endogenously to both spatial wage disparities and to migration costs (see e.g. Kennan and Walker, 2011).

It is natural to ask, then, what is missed by abstracting from these aspects of the mobility decision? To get a sense for this, it is helpful to think through the implications of the toy model illustrated in the panels of Figure 1.

To begin with, assume there are two locations, 1 and 2, and that there are no frictions to the mobility of labor. In this environment, it is well-known that equilibrium can be illustrated as in Panel A. Frictionless mobility implies that the marginal product of labor in market 2 is the opportunity cost of labor in market 1 (and vice versa). Consequently, the labor demand curve in market 2 acts as the supply curve of labor to market 1. In equilibrium, there is a law of one wage, equal to w^*, and there is no unemployment.

Now imagine the economy faces a shock, for example that the demand for labor in market 1 declines. Panel B illustrates the outcome in a frictionless economy: Wages fall in both locations to w', and the law of one wage is upheld by migration of workers from location 1 to location 2. There remains no unemployment.

We can now consider the effects of costly mobility across locations in this model. To make matters as stark as possible, imagine that it is infinitely costly to move location. Panel C depicts outcomes in this world: Since workers cannot migrate to arbitrage wages, wage differentials emerge in equilibrium. However, even in this case, there is no unemployment; workers remain employed in their original location.

The final panel of Figure 1 highlights an interesting result: that an interaction between mobility frictions and institutions can arise in this environment. Panel D considers the case in which mobility is impossible *and* there exists an unemployment benefit equal to b. In this case, spatial wage disparities persist (though are lessened), and unemployment arises in equilibrium. An interesting (and arguably realistic) implication is that unemployment can be viewed simultaneously as both voluntary and involuntary: Confronted with a job offer in location 1, the unemployed are indifferent on the margin. A job offer from location 2, however, would be a strict improvement for the unemployed.

The simple model in Figure 1 yields a number of useful lessons. The first is that, once one allows for endogenous migration, it can be seen that mobility is the outcome of reallocational shocks across space. Second, we see that migration and wage outcomes are intertwined in equilibrium: Mobility both responds to and determines wages. The law of one wage in Panels A and B of Figure 1 is upheld by perfect worker mobility; the wage disparities in Panels C and D arise because of mobility frictions.

A final important message of the toy model Figure 1 is that it reiterates a key message of Rupert and Wasmer's paper—that frictions to mobility interact with institutions (e.g. unemployment benefits b) to determine equilibrium unemployment. However, in this simple model of spatial arbitrage this interaction arises for precisely the opposite reason emphasized in the authors' model—it is because space is *not* isotropic. Unemployment arises because workers in location 1 would like to move to location 2 if it weren't for the mobility friction.

Of course, this does not imply that the model Rupert and Wasmer explore is not empirically relevant. Rather, it seems that the two models capture different dimensions of worker mobility. The model in Figure 1 is evocative of the steel worker in a declining steel town deciding on whether to move to a more promising location. In contrast, Rupert and Wasmer's model evokes the decisions of a worker in an urban labor market trying to move closer to the location of her job. Both seem worthy of further thought.

My final comments relate to the calibration strategy that Rupert and Wasmer pursue. Mobility frictions in their model are shaped by two parameters: the cost of commuting τ, and the arrival rate of housing offers λ_H. The paper suggests that differences in these two parameters can explain differences in unemployment and mobility between the United States and Europe.

I would argue that these results should be taken as more suggestive than conclusive. Specifically, the paper sets the cost of commuting to be fifty percent higher in Europe than in the United States. It is not entirely clear how the authors arrive at this number. Reference is made to the undeniably higher cost of gasoline in Europe, a difference which the authors shade down based on higher fuel efficiency in Europe. But, how exactly this implies a fifty-percent difference in τ is somewhat mysterious.

Similarly, the paper sets the mobility friction to be approximately twice the size in Europe. The authors admit that this is precisely the difference that allows that model to replicate the European mobility rate. The unfortunate implication of this is that it is hard to calibrate λ_H except by targeting the moment we wish to explain.

On further reflection, it seems to me that it is simply very difficult to calibrate the model. In reality, gasoline prices and fuel efficiency cannot be expected to account for the entirety of the costs of commuting, or of the differences in those costs across countries. Leading estimates of the costs of migration in the United States suggest that these costs are substantial. For example, Kennan and Walker (2011) obtain estimates of moving costs on the order of $300,000. These estimates seem so substantial as to be not entirely pecuniary. In this sense, it would be surprising if differences in mobility rates could be attributed to strictly pecuniary items like gasoline prices. Obtaining a plausible calibration of the non-pecuniary costs of moving across countries would seem to be a formidable problem.

To summarize, I think the interaction of mobility frictions with unemployment determination is an excellent question on which more work needs to be done. Rupert and Wasmer's take on this question—that workers are engaged in a search problem over locations—is a novel one. The model that emerges from their analysis displays the virtues of tractability and parsimony.

My reactions to the paper are threefold. First, the authors' assumption of isotropy is a strong one that seems at the root of the effect of mobility frictions on unemployment in their model. Second, the model abstracts from the notion that mobility acts as a form of spatial arbitrage, and as a result misses some interesting interactions between mobility costs and the determination of employment and wages. Finally, I think the calibration of the model should be taken as suggestive of the workings of the model, rather than as a fully-fledged quantitative exercise.

References

Kennan, John and James R. Walker. 2011. "The Effect of Expected Income on Individual Migration Decisions." *Econometrica*, Vol. 79, No. 1, 211–251.

Figure 1. A toy model of mobility as spatial arbitrage